



RECEIVED  
JAN 22 2004

TECH CENTER 1600/2900

### 1A. MOUSE AIOLOS cDNA SEQUENCE

CACGAGCGCACACCGCTCGGCTCTCCCTCGACACGCCCTCATCCCCGGTGT  
TCTCAAGTAGACGTCCCAGACGGCTGAGGCACTGTTCCACGCGATCA  
GGGTTCTCAGGCTTGACATTCAAAAGTGGGTGCGGAACCCGCGGCACTCGG  
AGCGTGTAAAGCGGCCAGCCAGCGCCGCTTAACCTCGCGCCCCGG  
CTGCCGGCGCTCCGCCCTGCATCTGCCGACGCGACCGAGCGATCCCGG  
GGCCTCCCTGCGCCCGGAATCTCCGCCAGCGCGGGTCCCCACGGCAGC  
AGCACGTGGAGCGGCCGCGAGCCTGAGCGACAGCTGCAGCCCGCGGCC  
CGCGCGACATGGAAGATATAACACGACTGTGGAGCTGAAAAGCACGGAG  
GAGCAGCCTCTGCCACAGAGAGCCCAGACGCTCTGAATGACTACAGCTGC  
CCAAACCTCATGAGATAGAAAACGTGGACAGTAGAGAAGCCCCAGCCAATG  
AAGACGAAGATGCAGGAGAAGATTGATGAAAGTGAAGATGAATACAGCG  
ACAGAGATGAGAACATTATGAAGCCGGAGCCATGGGAGATGCAGAAGAGA  
GTGAAATGCCTTACAGCTATGCAAGAGAACAGCGACTATGAAAGCATTAA  
GCTGGAGAGACACGTGCCCTATGACAACACAGCAGACCAACCAGTGGGAAGAT  
GAAC TGCGACGTGTGCCGGTATCCTGCATTAGCTTCAACGTCTGATGGTTC  
ATAAGCGAAGCCATACCGCGAACGCCCTCCAGTGTAAATCAGTGCAGGGGC  
ATCTTTACTCAGAAAGGTAACTCCTCCGTATATTAAACTGCACACGGGGG  
AAAAACCTTTAAGTGTCACCTCTGCAACTACGCATGCCAAAGGAGAGATGC  
GCTCACGGGACACCTTAGGACACATTCTGTGGAGAACCGTACAAGTGTGAG  
TTCTGCCGAAGAAGCTACAAGCAGAGAACGCTCCCTGGAGGAGCACAAGGAA  
CGCTGCCGAGCTTCTCAGAACCCCTGACCTGGGGACGCTGCAAGTGTGG  
AGGCAAGACACATCAAAGCGAGATGGGAAGTGGAGAGAGCTCTCGTCTGG  
ACAGATTAGCAAGCAATGTGGCTAACGAAAAAGCTCGATGCCCTCAGAAATT  
CATCGGTGAGAACGGCACTGCTCGATGCCACTAACATCCCGCTACATG  
TACGAGAAGGAGAACGAGATGATGCAGACCCGGATGATGGACCAAGCCATC  
AATAACGCCATCAGCTATCTAGGGCTGAAGCCTCCGCCCTAGTCCAGA  
CTCCGCCTGCTCCCACCTCTGAGATGGTCCAGTCATCAGCAGTGTGTACCCC  
ATAGCACTACTCGGGCCGATATGCCAATGGGGCCCCGCAgGAGATGGAAA  
AGAAACGGATCCTCTGCCAGAGAACGATCTGCCTCTGAACGAGGTCTGTC  
CCCCAATAACAGTCCCAGGACTCCACAGACACCGACAGCAACCACGAGGAT  
GCCAACATCTCTACAGCAAAGCCACGTGGCTCTCCCCAGGCCGCAATG  
GGATGCCTCTCTGAAGGAGGTCCCTCGCTCTTGAACCTCTCAAGCCCCCT  
CCCATCTGCCCTGAGGGACTCCATCAAAGTGTAAACAAAGAAGGGAGGTGA  
TGGATGTGTTCTGATGTGACCACTGCCACGTCCCTCTCCTAGATTATGTGATG  
TTCACCATCCACATGGGGGCCATGGTTCCGTGATCCCTTGAGTGTAAACAT  
GTGTGGCTATCGAACGCCAGATCGCTATGAGTCTCCTCTCACATGCCAGAG  
GAGAGCACAGAGCCATGTTGAAGTGGAGCATCTGTCCTCAATGCGAGGGTCAA  
CATTGTTTTAAAGCTGATGGTAGCCTATCCAGTAGACTGAACCAAACCC  
ACCTCGAG

FIG. 1A



RECEIVED

JAN 23 2004

TECH CENTER 1600/2900

1B. MOUSE AIOLOS PEPTIDE SEQUENCE

MEDIQPTVELKSTEEQPLPTESPDALNDYSLPKPHEIENVDSREAPANEDEDAGED  
 SMKVKEDEYSRDRDENIMKPEPMGDAEESEMPYSYAREYSDYESIKLERHVPYDNS  
 RPTSGKMNCDCVGLSCISFNVLVHKRSHTGERPFQCNQCGASFTQKGNNLLRHI  
 KLHTGEKPKCHLCNYACQRRDALTGHLRTHSVEKPYKCEFCGRSYKQRSSLEE  
 HKERCRAFLQNPDLGDAASVEARHIKAEMGSERALVLDRLASNVAKRKSSMPQ  
 KFIGEKRHCFDANYNPGYMYEKENEMMQTRRMDQAINNAISYLGAEAFRPLVQ  
 TPPAPTSEMVPVISSVYPIALTRADMPMGAPQEMEKKRILLPEKILPSERGLSPNN  
 SAQDSTDTSNHDERQHLYQQSHVVLQARNGMPLLKEVPRSFEKKPPICLRD  
 SIKVINKEGEVMDVFRCDHCHVLFLDYVMFTIHMGCCHGFRDPFECNMCGYRSH  
 DRYEFSSHIARGEHRAMLK

FIG. 1B

1	50
aio .....	.....
Ik1 MDVDEGQDMS QVSGKESPPV SDTPDEGDEP MPVPEDLSTT SGAQQNSKSD	
51	100
aio .....	.....
Ik1 RGMASNVKVE TQSDEENGRA CEMNGEECAE DLRMLDASGE KMNGSHRDQG	
101	150
Ik .....	.....
Ik1 NSARGKMNCD VCGLSCISFN VLMVHKRTHT GERPFQCNQC	
SSALSGVGGI RLPNGKLKCD ICGIVCIGPN VLMVHKRSHT GERPFQCNQC	
151	200
aio GASFTQKGNL LRHIKLHTGE KPFKCHLCNY ACQRRDALTG HLRTHSVEKP	
Ik1 GASFTQKGNL LRHIKLHSGE KPFKCHLCNY ACRRRDALTG HLRTHSVGKP	
201	250
Aio YKCEFCGRSY KQRSSLEEHK ERICRAFLQNP DLGDAASV.. ..EARH	
Ik1 HKCGYCGRSY KQRSSLEEHK ERCHNYLESM GLPGMYPVIK EETNHNEMAE	
251	300
Aio IKAEMGSERA LVLDRLASN VAKRKSSMPQK FIGEKRHCFD ANYNPGYMYE	
Ik1 DLCKIGAERS LVLDRLASN VAKRKSSMPQK FLGDK..CLS DMPYDSANYE	
301	350
Aio KENEMMQTRM MDQ.....	.....
Ik1 KE.DMMTSHV MDQ	

FIG. 3



RECEIVED  
 JAN 22 2004  
 TECH CENTER 1600/2900

**Ex7**

1 → ACTIVATION DOMAIN

cAio PPLLLVPGEK RHCFDANYNP GYMYEKENEM MQTRMMDQAI NNAISYLGAE  
 mAio ..... GEK RHCFDANYNP GYMYEKENEM MQTRMMDQAI NNAISYLGAE  
 mIka ..... GD KCLSDMPYDS ANYEKE.DM MTSHVMDQAI NNAINYLGAE  
 cIka ..... DRLDLDPYDA TTNYEKENEI MQTHVIDQAI NNAISYLGAE

50 ← YAS 5 100

cAio AVRPLVQTTPP APTSEMVPVI SSVYPIALTR AD... MPNGA PQEMEKKRIL  
 mAio AC..LVQTTPP APTSEMVPVI SSVYPIALTR AD... MPMGA PQEMEKKRIL  
 Chul SLRPLVQTTPP G.SSEVVPVI SSMYQLHKPP SDGPPRSNHS AQD.AVDNLL  
 cIka SLRPLVQTTPP V.GSEVVPVI SPMYQLHKPH GDNQTRSNHT AQDSAVENLL

YAS 3 ← → 150

101  
 cAio L..PEKILPS ERGLSPNNSA QDSTDTSNH ED.RQHLYQQ SHVVLQPARN  
 mAio L..PEKILPS ERGLSPNNSA QDSTDTSNH ED.RQHLYQQ SHVVLQPARN  
 mIka LLSKAKSVSS EREASPSNSC QDSTDTESENNA EEQRSGLIYL TNHINPHARN  
 cIka LLSKAKSVSS ERDASPSNSC-QDSTDTESENNA-EE.RSGLIYL TNHIGPHARN

151 ← → YIZ 200

cAio GMPLLKEVPR SFELLKPPPI CLRDSIKVIN KEGEVMDVFR CDHCHVLFLD  
 mAio GMPLLKEVPR SFELLKPPPI CLRDSIKVIN KEGEVMDVFR CDHCHVLFLD  
 mIka GLA.LKEEQR AYEVLRAASE NSQDAFRVVS TSGEQLKVYK CEHCRVLFLD  
 cIka GIS.VKEESR QFDVLRAGTD NSQDAFKVIS SNGEQVRVYK CEHCRVLFLD

201 ← → 249

cAio YVMFTIHM.GCHGFRDPF ECNMCGYRSH DRYEFSSHIA RGEHRAMLK  
 mAio YVMFTIHM.GCHGFRDPF ECNMCGYRSH DRYEFSSHIA RGEHRAMLK  
 mIka HVMYTIHM GCHGFRDPF ECNMCGYHSQ DRYEFSSHIT RGEHRYHLS  
 cIka HVMYTIHM.GCHGFRDPF ECNMCGYHSQ DRYEFSSHIT RGEHRFHMS

YAS 5 = interaction domain

**FIG. 2**

YAS 3 = interaction domain

YIZ = Ikaros dimerization domain



Exon 3      IRHEEAPANEDDAGEDSMKVKEDEYSDRDENIMKPEPMGDAEESEMPYSA  
 REYSDYESIKLERHVPYDNSRPTSGKMNCDVCGLSCISFNVLMVHKSHT

Exon 4

GERPFQCNQCGASFTQKGNLLRHKLHTGEKPFKCHLCNYACQRDALTGH  
 LRTHS

Exon 5

VEKPYKCEFCGGRSYKQRSSLEEHKERCRAFLQNPDLGDA

Exon 6

ASVEARHKAEMGSERALVLDRLASNVAKRKSSMPQKF

Exon 7

GEKRHCFDANYNPGYMYEKENEMMQTRMMMDQAINNAISYLGAEAFRPLVQ  
 TPPAPTSEMVPVISSVYPIALTRADMPMGAPQEMEKKRILLPEKILPSERG  
 LSPNNISAQDSTDTSNHEDRQHLYQQSHVVLQARNGMPLLKEYVPRSFEL  
 LKPPPICLRSIKVINKEGEVMDVFRCDHCHVLFLDYVMFTIHMGCHGFRD  
 PFECNMCGYRSHDRYEFSSHIARGEHRAMLK

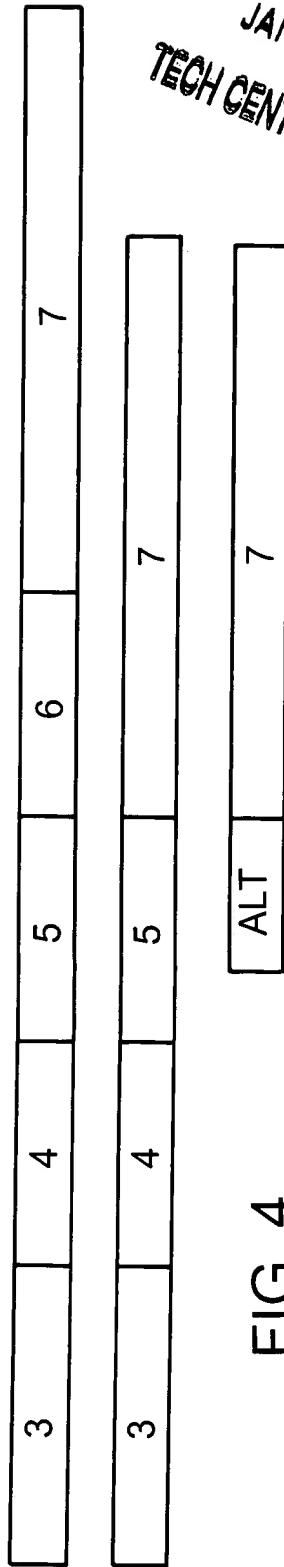


FIG. 4

RECEIVED  
 JAN 29 2004  
 TECH CENTER 1600/2800



RECEIVED  
JAN 22 2004  
CENTER 1600/2900

10 20 30 40 50 60 70 80 90  
 GAAAGCTGAAATGTTTAAAGTCGAACCGGCTGAAATGCCAAGCTGAACTCCATTACGATTTCAAGCTAA 90  
 TATGAAACATTAAGTGTGAAACATGTTGCTGAACTCCATTACGATTTCAAGCTGAACTCCATTACGATTTCA 180  
 TCTGATCAGCTTCAATGCTTAATGCTTAACTGCTTAAACCTTCACTGAACTTCACTGAACTTCACTGAACTTCA 270  
 ACTCAGAAAGTTAACCTCCACATTAAACCTTCACTGAACTTCACTGAACTTCACTGAACTTCACTGAACTTCA 360  
 AGAGATGCGCTCACGGGATCTTCTTGGACACATTCTTGGAGAAACCTTACAATGTTGAGTTTGTGGAGGGATG 450  
 460 470 480 490 500 510 520 530 540  
 TCGTGGGGGACACCTGCTTCAAGCTGAACTCCATTACGATTTCAAGCTGAACTCCATTACGATTTCAAGCTAA 540  
 GCGAGCTGAACTCCATTACGATTTCAAGCTGAACTCCATTACGATTTCAAGCTGAACTCCATTACGATTTCA 630

FIG. 5A



Lipman-Pearson Protein Alignment

kTuple: 2; Gap Penalty: 4; Gap Length Penalty: 12

Seq1(1>209)

human Aiolos protein AioC/hAio2

Seq2(1>508)

mouseaiolos.protein

		Similarity	Gap	Gap	Concensus
		Index	Length	Number	Length
	(1>209)				
	(66>273)	89.5	1	1	209

human Aiolos protein AioC/hAio2

ERDENYLKSEPMGNAAEEPEIPYSYSREYNEYENIKLERHVVVSFDSSSRPTSGKMMCDVCGL 60  
 :RDEN: :K: EPMG: AEE: E: PYSY: REY: : YE: IKLERH: : D: SRPTSGKMMCDVCGL

mouseaiolos.protein

DRDENIMKPEPMGDAEESEMPYSSYAREYSYDYESIKLERHV-PYDNSRPTSGKMMCDVCGL 124  
 SCISFNLYMVKRSHTGERPFOCNOCGASFTQKGNLLRHJKLHTGEKPFKCHLCNYACQR  
 SCISFNLYMVKRSHTGERPFOCNOCGASFTQKGNLLRHJKLHTGEKPFKCHLCNYACQR  
 SCISFNLYMVKRSHTGERPFOCNOCGASFTQKGNLLRHJKLHTGEKPFKCHLCNYACQR

human Aiolos protein AioC/hAio2

RDALTGHLRTHSVEKPYKCEFCGRSYKQRSSLEEHKERCRTFLQSTDPGDTASAEARHIK 180  
 RDALTGHLRTHSVEKPYKCEFCGRSYKQRSSLEEHKERCR: FLQ: D GD: AS. EARHIK

mouseaiolos.protein

RDALTGHLRTHSVEKPYKCEFCGRSYKQRSSLEEHKERCRTFLQNPDLGDAASVEARHIK 244  
 AEMGGSERALVLDRLASNYAKRKSSMPQKF 209  
 AEMGGSERALVLDRLASNYAKRKSSMPQKF  
 AEMGGSERALVLDRLASNYAKRKSSMPQKF 273

human Aiolos protein AioC/hAio2

AEMGGSERALVLDRLASNYAKRKSSMPQKF 209  
 AEMGGSERALVLDRLASNYAKRKSSMPQKF  
 AEMGGSERALVLDRLASNYAKRKSSMPQKF 273

FIG. 5B

RECEIVED  
 JAN 22 2004  
 TECH CENTER 1600  
 100-44244-1



RECEIVED

JAN 22 2004

TECH CENTER 1600/2020

FIG. 6



RECEIVED  
JAN 22 2004  
TECH CENTER 1600/2900

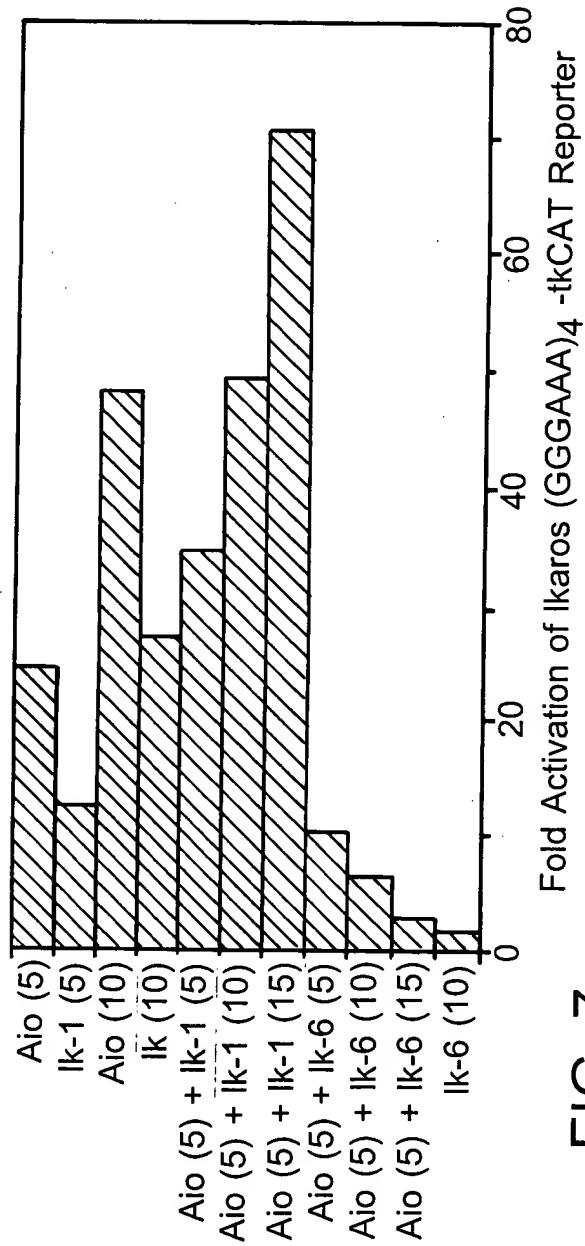


FIG. 7



RECEIVED  
JAN 22 2004  
TECH CENTER 1600/2900

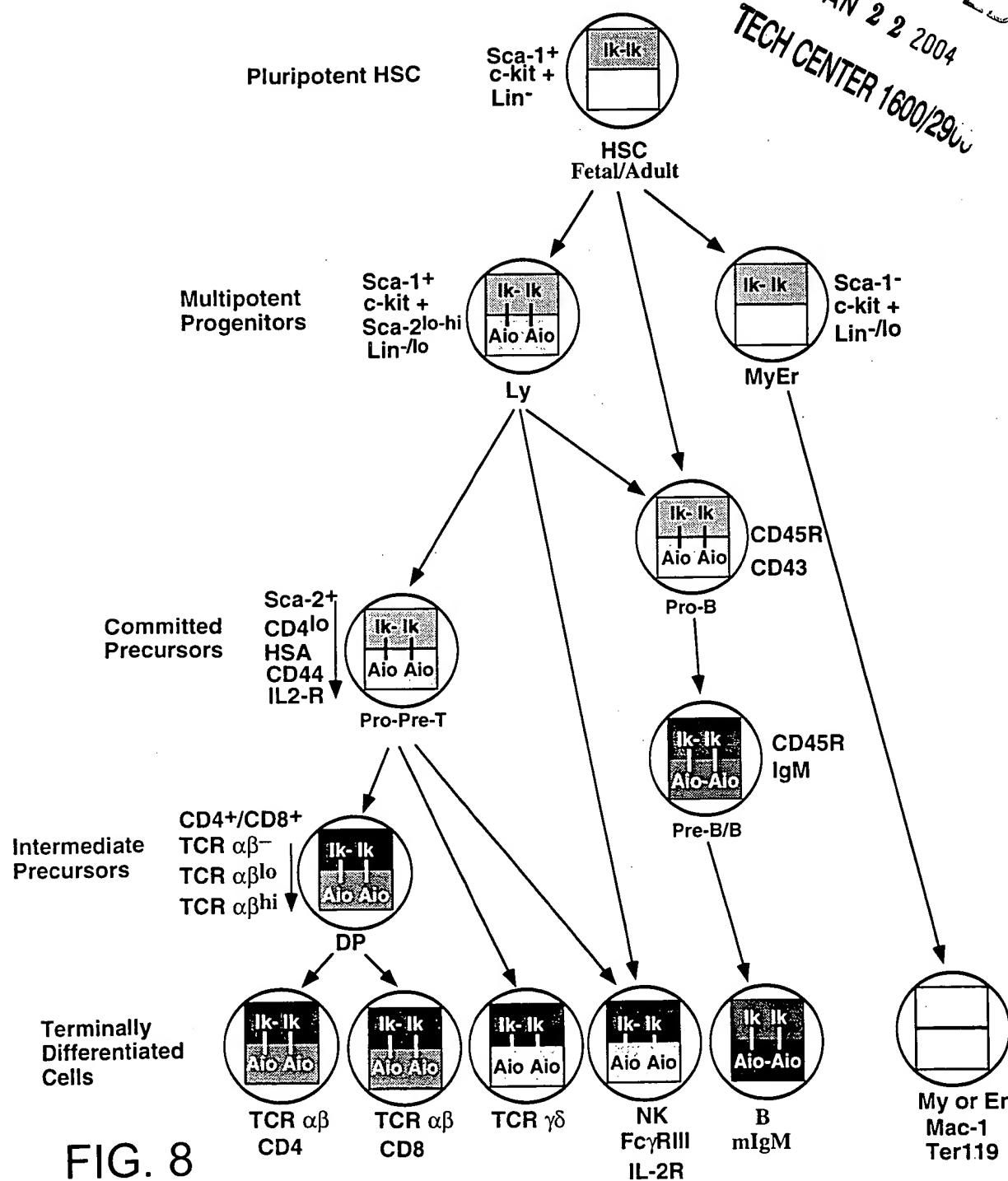


FIG. 8

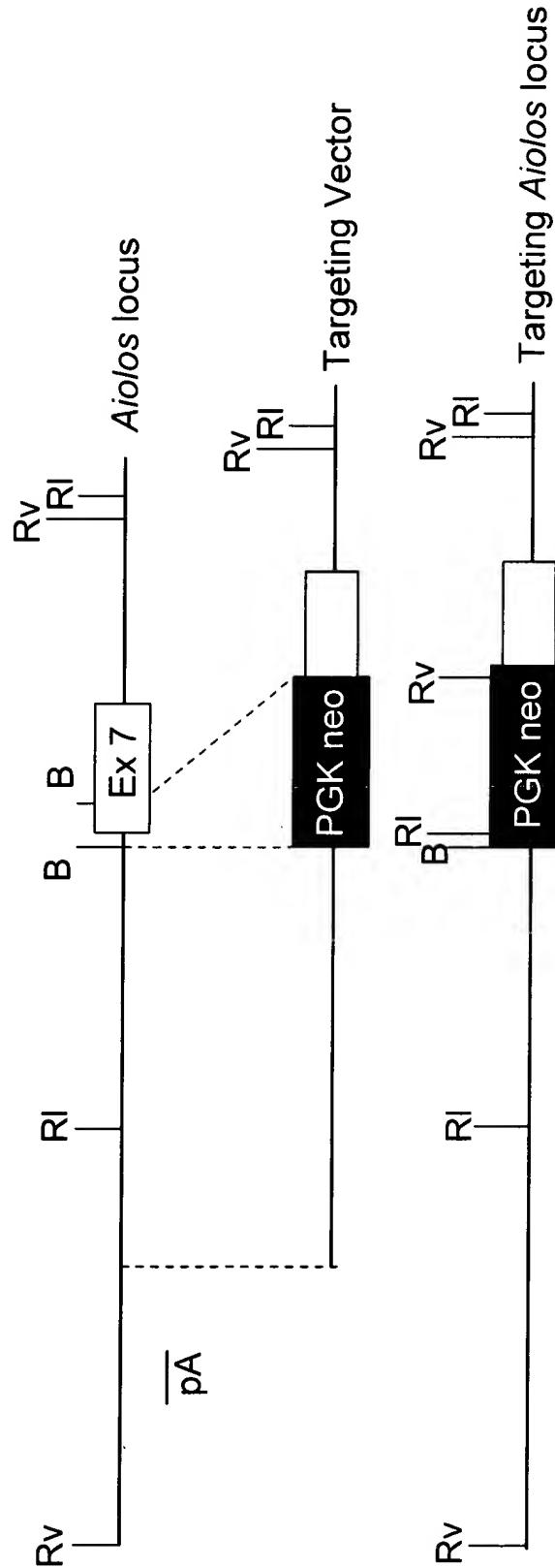


FIG. 9

RECEIVED  
JAN 22 2004  
TECH CENTER 1600/2900